

Competency-Based Undergraduate Curriculum: A Critical View

INTRODUCTION

Portuguese in the 16th century followed by the East India Company in the 1600s were responsible for the introduction of the Western Medicine to the Indian subcontinent. Subsequently, the establishment of the Calcutta Medical College in 1835 laid down the foundation of the Medical Education in India.^[1] With increase in medical colleges, the Medical Council of India (MCI) was established in 1933, which has now been taken over by a government appointed Board of Governors, soon to be replaced with the National Medical Commission. MCI, entrusted with standardizing medical education, has put forth Graduate Medical Education regulations which aim at providing training for medical undergraduates to recognize the health right of all citizens, learn every aspect of national health policies and devote himself/herself to addressing the health needs of the society.^[2] Over the years, there has been a widening gap between the societal health needs, health care available, and the medical education provided. While a lot of research and efforts have gone into addressing the first two, it is only now, that we are looking at the much needed reforms in the Medical Education in the form of Competency Based Undergraduate Medical Curriculum/ Education (CBMC/E).

CURRENT MEDICAL EDUCATION AND CURRICULA

The curriculum is the foundation of any educational program, and its effective implementation plays a major role in the program outcome, here being competent doctors. Traditional medical curricula and programs need to evolve from being science based to competency based.^[3] Graduate medical curriculum is oriented toward creating an Indian Medical Graduate (IMG) to undertake the responsibilities of a primary care physicians/doctors of the first contact who is able to provide preventive, promotive, curative, palliative, and holistic care with compassion. IMG is envisaged as a “five-star doctor,” possessing competencies in the following five areas: clinical, leadership, communication, professionalism, and lifelong learning.^[2]

The current medical education is based on a curriculum that follows a subject centered tea bag model where the assumption is that student staying immersed (time spent) in a particular subject will develop the necessary flavor (proficiencies in that subject).^[4] It is more cure oriented with little focus on preventive and promotive care, very little on rehabilitative and almost none on palliative care. Leadership, management, communication, and ethics are grossly neglected. It focuses more on knowledge (cognitive domain), lesson skills (psychomotor), and almost none on affective (attitude). Most students enter MBBS only to pursue postgraduation. One year rotating internship, supposed to be hands on training to acquire the skills

and right attitude, is wasted in cramming (fortifying the cognitive domain at the expense of effective and psychomotor) to secure a good rank in multiple-choice questions (MCQ)-based entrance test and thereby admission to a PG branch of their choice. Training takes place largely in tertiary care hospital settings (ivory tower of illnesses), and the students are neither aware of real health problems/needs of the community nor empowered to function at basic primary setup or implementing the National Health Programs. With medical education booming as an industry, there has been the entry of private operators, who aim at maximizing return on investments often at the cost of compromising on standards of medical education and patient care.

Furthermore, the teaching–learning (TL) and the assessment methods focus more on knowledge than on attitude and skills. Thus, the outcome product of medical education – fresh medical graduate may have extraordinary knowledge but lacks the basic clinical and soft skills required to practice and provide health care to the community. CBME involves restructuring the medical training and curricular planning with focus on “competencies” and is expected to tackle these misalignments and concerns.^[5,6]

COMPETENCY-BASED MEDICAL CURRICULA AND EDUCATION: INTRODUCTION

Competency is an observable ability of a learner that integrates multiple components including knowledge, skills, values, and attitude which is desired in real life. Competencies are an amalgamation of different objectives and subcompetencies.^[7] CBME is an approach to prepare physicians for practice that is fundamentally oriented to graduate outcome abilities and organized around competencies derived from an analysis of societal and patient needs. It de-emphasizes the current time-based training and promises greater accountability, flexibility, and learner-centeredness.^[8] In contrast to the current model, which is teacher driven, focused on content and summative assessment; CBMC is learner-driven, focuses mainly on skills (ability to demonstrate/perform) and on formative assessment.^[9] CBMC, begins with identified outcomes, on the basis of which it defines the abilities needed by graduates and then develops milestones, instructional methods, and assessment tools to facilitate their acquisition by learners.^[10] The global competencies expected of an IMG are listed in Table 1.

COMPETENCY BASED MEDICAL CURRICULA: COMPONENTS^[7]

Subject-wise subcompetencies

All subjects have been classified three categories, namely

Table 1: Competencies expected of an Indian Medical Graduate

Competency	Description
Clinician	Who understands and provides preventive, promotive, curative, palliative, and holistic care with compassion
Leader and member of the health-care team and system	Ability to take everyone along to deliver the outcome in time bound manner more efficiently and effectively with capabilities to collect, analyze, synthesize, and communicate health data appropriately
Communicator	With patients, their families, colleagues, community and political leaders to influence by providing evidence-based interventions
Lifelong learner	With a commitment to the continuous improvement of skills and knowledge as per the change in medical technologies and epidemiological shift
Professional	Who is committed to excellence, ethical, responsive and accountable to patients, community, and the profession

(1) pre- and para-clinical subjects, (2) medicine and allied (include community medicine), and (3) surgery and allied. To reconcile the subject based instruction with transition to CBE, subject-based outcomes (subcompetencies) have been derived and compiled by subject experts. Guidance on the domain, level of proficiency, essentiality, suggested TL and assessment methods, and recommended integration have been provided in three volume standalone document available on MCI website.^[11] A total of 412 topics with 2949 outcomes (subcompetencies) have been identified for the entire curriculum including 20 topics and 107 outcomes for the community medicine.^[12]

Alignment and integration of learning

Alignment is temporal coordination (horizontal) of related topics in the same phase whereas the Integration refers where concepts in a topic that are similar (overlapping and related) are merged in a single class, and the subject-wise demarcations are removed. It also includes bringing the topics from different phases (vertical) to a particular phase for the reinforcement/introduction. This will help bridge the gap between hospital-based and community-based medicine and between basic and laboratory services with clinical relevance.

Foundation course

One-month, immediately after the admission, will be dedicated to orient new students about the teaching program, help them adapt, learn language (English and local language), computer use, communication skills, time management, handling stress as well as for sports and extra-curricular activities.

Early clinical exposure

In order to provide clinical context and ensuring patient centricity, the student will be provided clinical exposure starting from 1st year itself. It shall focus on basic science correlation, basic clinical and soft skills, and humanities in medicine.

Electives

They have been introduced for flexible learning and providing opportunities for diverse learning experiences. It will be dedicated 2, 4 weeks blocks III MBBS part I examination wherein two projects will be undertaken one each from clinical learning and the basic subjects or community project or national health programs. During this period, students will be exposed also to the self-directed learning.

Attitudes, ethics, and communication

It is a longitudinal modular program with dedicated time in all phases. Five modules (34 h), developed by MCI to impart AETCOM competencies, will be taught throughout the course with a built-in provision of assessment.

Skill acquisition and certification

A mandatory and desirable list of competencies to be obtained by IMG has been evolved by MCI. Some of the skills need to be certified during MBBS while most during the internship period. Institutes are mandated to create skill laboratories and dedicated time for basic skills acquisition has also been appropriated in the time table.

Revision of training learning formats

Emphasis will be on student-centric (interactive and small groups) and interactive (problem-based, case-based, team-based) learning. Didactic lectures should not exceed one-third of total schedule. Learning in primary and secondary care settings, with a strong emphasis on prevention, national health priorities, and programs, will be encouraged. During the clinical phase, student doctor method of clinical training will be promoted. Students will be provided ample opportunities for self-directed learning.

Multifaceted assessments

Formative assessments in theory and practical/clinical work (internal marks) will have a minimum pass score (separately in theory and practical) as a prerequisite to appear in summative assessment (final exam). Viva marks shall be the part of practical/clinical assessment. Internal marks will not contribute to the university (final examination). A provision has been made for assessment of skills and AETCOM competencies. Formative assessment will be streamlined with an emphasis on continuous assessment through logbooks and reports.

In the summative assessment (university examination), questions shall be of different types such as long answer questions, short answer questions, and MCQ – not more than 20% of total theory marks. Students shall qualify separately in both theory and practical to pass. There will be one main examination in an academic year, with dedicated time appropriated in the schedule and a supplementary examination within 90 days of declaration of result of the main examination.

COMMUNITY MEDICINE IN COMPETENCY-BASED UNDERGRADUATE MEDICAL CURRICULUM

Community medicine has been included under medicine and

allied subjects. In the foundation course, there is 17 h of teaching related with community medicine including 8 h for a visit to health centers in the community. Although the foundation course has to be conducted in preclinical departments, there are enough elements/components (expectations of society/patients from doctors, community-based learning, various types of health workers and their role) where our faculty has to play the lead role. It also stresses on community-oriented educational experience, with learning in primary and secondary care environments, focused on prevention, national health programs, and local/regional health priorities. The final summative evaluation for community medicine, to be held at the end of the 3rd MBBS part I, along with ENT, ophthalmology and forensic medicine, will have two theory papers (100 marks each) and a practical (of 100 marks). Weightage of assessment of community medicine (in total MBBS) has rightly been increased.

ROLL OUT PLAN FOR COMPETENCY-BASED UNDERGRADUATE MEDICAL CURRICULUM

This new curriculum is being rolled out in a phased manner with all the new batches joining from 2019. Faculty orientation and training will be done in a cascading manner starting with training of conveners and coconveners from regional/nodal centers in January at MCI headquarters till faculty training by trained peers at institute level in May–June 2019.^[7]

SOME OF THE CHALLENGES IN IMPLEMENTATION

CBMC is an overhaul of the system; we all have been used to. This paradigm shift is going to be difficult, especially since it is an overnight change rather than a gradual transition. Implementation is going to require additional infrastructure, resources, workforce, and finances.

- New educational roles of the teachers as a facilitator, planner, manager, performance assessor are huge and a mere 3 days of Curriculum Implementation Support Program cannot provide this competency. Observational evaluations among the faculty also emphasize the same.^[13] Further, many of the faculties are not trained or do not bother to learn even the ideal conventional TL methods. Didactic lectures have been the most commonly used medium of learning and favored by both teachers and students alike. Phasing out of this medium for the adoption of a small group, learner-centric, interactive TL methods will be met with great resistance, especially with faculties who find comfort in continuing with tradition or are used to reading out of their notes/PowerPoint presentations. The lack of motivation and noncooperation from administrators and faculty will hamper its uniform implementation
- Most medical colleges are run with deficient staff, which is filled only during MCI inspection. And that too, mostly by temporary transfers! TL and assessment methods proposed under CBMC will require a lot more faculty strength. Foundation course has certain areas such as language,

computer skills, sports, and extracurricular activities for which additional specialist persons may be needed

- Although details are provided, comprehending the various competencies, subcompetencies, milestones, and planning their evaluation methods is a challenging task. Mismatch between the intended competency and method of assessment, especially in the AETCOM module, has been highlighted by studies.^[14] It is probably due to the fact that the logistics of dealing with large numbers of MBBS students which makes a “one is to one” assessment (required here) difficult and unfeasible with available methods and resources
- Alignment and integration, though ideal on paper, are difficult to implement due to different weightage, time allotments, and staff strengths of various subjects
- The concept of electives is laudable, but it needs strong monitoring so that it is not treated as additional vacation or used to compensate attendance in other subjects or for repeat postings. Same may happen with the foundation course as well because parents may feel that the actual teaching will start after this course
- Modules of CBME are silent on certain issues which need clarification. If a student joins the course late either due to 2nd or 3rd rounds of counseling or due to judicial intervention, what about his foundation course? Will it be held separately afterward? Furthermore, there will be only one main examination in a year, and a supplementary examination will be held within 90 days. It implies that those who pass in supplementary examination will join the main batch. In such a situation what about the course which has been completed in those 90 days and how they will have a slot for electives? All the slots are so well defined and rigid that the curriculum can hardly be called most flexible as claimed by MCI
- There is a criticism also associated with CBME that it does not mention a word about the concept of general practice or family physician. It neither meets the public health needs of the country nor is it aligned to the policies of the Government of India namely National Health Policies 2017 and recommendations of the Parliament in 2016^[15]
- The deemphasis on time-based training with learners progressing at their own pace may create a chaotic setup, more so in case of intercollege transfers and multiple batches entering different phases at different times.

SUGGESTIONS FOR EFFECTIVE COMPETENCY-BASED UNDERGRADUATE MEDICAL CURRICULUM IMPLEMENTATION

- Sensitization programs, supported by evidence from literature regarding its necessity and advantages, for deans and college managements are essential to make them receptive toward CBMC.^[6,9] Sensitization and training of stakeholders and faculty is critical to ensure uniform implementation of the CBMC. Effective implementation will require continuous trainings with supportive supervision

- MCI regulations suggest the minimum staff requirements for the training program. However, it is interpreted as maximum requirements by all college administrators and does not provide anything beyond that even if the college is handling extra workload or discharging duties other than routinely assigned to them (as per MCI regulations). Hence, MCI needs to increase the number of faculty required to implement CBME
- After passing the MBBS, almost all students appear in the pre-PG entrance examination. It should be modified such that learning in college remains relevant to them. There should be more questions on competencies (know how, show/perform how) than only on the cognitive domain
- It is mandatory to attain a certain level of competencies before qualification, and due to the logistic reasons, they cannot be certified in the summative process. Hence, the weightage for formative evaluation has to be there to meet these requirements. Furthermore, in view of large numbers of examinees (150–250 per batch), the summative process should change from the current format to one which permits greater use of measures such as OSPEs/OSCEs, more objective written methods of evaluation and a skill-based final examination.^[14]

CONCLUSION

Everything needs to evolve, and so does medical education. Not accepting CBME will mean not keeping up with the global standards and need of the hour. Its strengths are that it focuses on outcomes, attitudes, skills, communication, ethics, and professionalism. However, it cannot be considered as one stop solution for all the problems of medical education. It should not end up as yet another change in the curriculum not addressing the problems of the conventional curriculum and creating its own. To maximize its gains, a hybrid approach would be preferred wherein initially CBMC is built-up on the tenets of the existing curriculum, and the later conventional curriculum gets gradually replaced by it.^[5] This will dampen the shock of a sudden overhaul, prevent knee jerk rejections, and provide time and space for capacity building for effective implementation. The way we implement CBMC, taking into consideration, the local context and circumstances, will decide whether the desired outcomes are achieved or not.

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